

MINES, MINING, LOCAL STOCKS AND COPPER

Concentrator May
Soon Be Erected In
the Warren District

Copper Queen Consolidated Mining Company Now Considering Several Methods by Which to Mine the Tonnage in Sacramento Hill—Concentrating Plant Will Have a Capacity in the Neighborhood of 2500 Tons of Ore Per Day.

Location of Mill Has Not Been Decided, Nor Has the Proper Method for Extracting the Ore From the Mountain—Between Nine and Twelve Million Tons of Concentrating Ore Has Been Proved in Sacramento Hill by Churn Drills.

One of the most important facts to become public in many years, to the general public of Bisbee and the entire state of Arizona, is the long expected decision, on the part of the Copper Queen Consolidated Mining Company to begin the tearing down of Sacramento Hill, one of the treasure houses of the District, and to put its ore through concentrating mill of approximately 2500 tons capacity.

Several years ago the Copper Queen organization began to consider the possibility of mining Sacramento Hill. Prospect work on as large a scale as was necessary to determine the content of the mountain was difficult by any other means except churn drilling. This method was resorted to and drills worked all over the property, at given intervals. As a result in the past two years and a half, (the work being interrupted by the cessation of work at the time of the outbreak of the European war) enough ore has been determined to warrant the certain assumption that before the first of the coming year Bisbee will have another end to its already large activity.

Between nine and twelve million tons of ore have been determined in the Sacramento Hill. The number varies for the reason that with a high price for copper a greater tonnage can be mined profitably, while with an average price of the metal it will be necessary to handle the higher grades of ore in the hill.

Several methods of mining have been investigated for the purpose of adopting one to mine the contents of the mountain of copper. All of the methods have their advantages, but further investigation will determine which shall be used in the final analysis.

Top slicing has been considered. This system of mining has been in use at the Czar and is very practicable in the mining of big high grade ore bodies. This method is also used at Miami. Another method which has been considered is the shrinkage caving system, in use at Ray.

Still another system for the rapid extraction of ore is the Inspiration system. This system breaks the ore from inclined raises into chutes. The raises extended like the branches of a tree into a body of ore and the rapidity with which ore may be taken out accounts for the large production of the Inspiration Company and the consequent profits and value of the stock of that organization.

Last but not least is the steam shovel method of mining the hill. There is a considerable overburden which must be removed from the ore bodies, and another drawback is the regularity of the bodies. The bodies are scattered; they also vary in values. Sacramento Hill is not another Utah Copper or even a New Cornelia, where the overburden is slight, and where shovels can work the ground systematically and regularly. The character of the ore in Sacramento Hill and the location of it makes the steam method extremely hard of application but a great possibility, nevertheless.

The most practical as well as the safest method will be decided upon by the company. When this is completed the ore bodies will be developed by that method.

In the meantime the design of the smelter will be completed. The test mill, which has been operating in Bisbee for many months, has done much to simplify this question, if that is a possibility in such a large undertaking. Plans may already be in the embryo for the construction of the plant, but the officials declare that many features are so contingent upon what the future may determine that nothing of an exact certainty exists regarding them.

Several sites have been looked over for the erection of the concentrating plant. None has been selected and probably will not before some time has elapsed. The power plant, trackage and other features must be determined, and it may be possible that the erection of the mill will necessitate the removal of the machine shops and power house to another location.

In any event it appears certain that Sacramento Hill will be mined and that as soon as possible. Such activity, with its component part, a large concentrator, will mean a great boom for the Warren District. In the erection of the plant and in the mining of Sacramento Hill a large force of men will be necessary and a large expenditure of money will be made. All of this will be reflected in a bigger and better Bisbee.

COPPER LOOKING BETTER.

The price of the red metal continues strong and promises even better things for the future. The demand for the export trade appears to have been accelerated during the past several weeks and the foreign governments may soon have to come into the American market for from 300,000,000 to 500,000,000 pounds of the metal, for delivery during next year. It is printed in an eastern publication that an agent for some of the Allied governments approached one of the leading selling agents in the United States on the subject of a contract for next year and that he was turned down.

Industrial consumption is absorbing, probably, about two-thirds of the copper produced in the country at the present time in spite of the usual credit given to war demands for the metal. Manufacturers in the United States are now beginning to see light after being deluged with munitions orders for many months. They are now turning their activities into domestic lines and a great amount of copper is coming back to American consumers in the shape of manufactured articles, of one kind and another.

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ENGLISH GUNNERS
TAKE THINGS EASY

English gunners stripped to waist for comfort.

War may be all that Sherman said it was but the British gunners are determined to make it as little so as possible. Through most of the very hot weather they have found it pleasant to work stripped to the waist. Handling the large shells is warm work. The men are seen wearing the metal helmets.

GREEN MONSTER IS
PREPARING FOR THE
MACHINERY ON HAND

Future Is Bright for Largest of Companies in Verde District—Machinery Will Be Installed Very Fast.

JEROME, Sept. 2.—Big things are under way at the Green Monster.

The compressor, hoist and other machinery ordered in the east have been shipped. Bills of lading have been received at the company's office in Jerome and the consignment should be delivered at the Clarkdale depot within two weeks. There will be no delay in its installation for the new road, which affords access to all parts of the Green Monster property, is completed.

The laying of the 6000-foot two-inch pipe line, which is to convey water from Cliff creek and other sources of supply to the Revenue and other claims, is under way.

Managing Director W. S. Humbert is hiring every carpenter who heaves in view, for about a dozen camp buildings are to be started at once and rushed to completion.

These buildings are to be on the Revenue claim, near the southeast corner of the property, for it is there that a 1000-foot shaft is to be started immediately upon arrival of the machinery.

There are to be two bunk houses, each with accommodations for twenty men. One will be for the Mexican miners and the other for the American miners. At some distance from the bunkhouses will be a clubhouse. The principal feature of the clubhouse will be a large room in which will be placed tables for cards and reading. It is planned to install a small library and to keep the latest magazines and newspapers on file at all times.

A boarding house, storehouse, residence for the superintendent, carpenter shop, change room, machine shop and office building are to be rushed through to completion. Quarters will be provided for the managing director, perhaps in an addition to the office building. The hoist and compressor are to be placed in one building near the shaft mouth.

The site chosen for the new shaft is on the diorite side of the main contact and only 300 or 400 feet from the Revenue tunnel. It is expected that it will be sunk at the rate of 125 feet a month. No time will be lost.

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SMELTER PLANS
IN PROSPECT
FOR LITTLE
DAISY

People of Jerome Think That United Verde Extension Is Maturing Its Plans Toward Building Big Smelter.

FREIGHT ON ORE IS BIG ITEM TO MINE

Company Buys Water Rights in Neighborhood of Clarkdale—Ore Now Being Sent to Four Smelters.

JEROME, Sept. 2.—Various circumstances cause the people of the Jerome district to feel that the United Verde Extension company is rapidly maturing its plans for the erection of a smelter.

Not only have the officers and representatives of the company closely examined the entire district with a view of locating the most advantageous site for a smelter, but they have taken steps to secure a water supply for the big plant.

The Black canyon water, six miles southwest of Clarkdale, has been purchased by the United Verde Extension company for \$7,000.

This supply, it is stated on good authority, is not adequate for the purpose. The flow of Black canyon, though a torrent after a rain, is not constant, and in seasons of little rain, is perfectly dry. There is a site for a small storage reservoir, and, if necessary, the Extension company can put in a dam.

Negotiations for another water supply in the south end of the district, said to be more dependable and better in every way than Black canyon, are under way.

It will be an easy matter to pipe water from Black canyon and the other source of supply mentioned to the J. M. Brown ranch, just south of Clarkdale, generally thought to be the most profitable site of the smelter.

Officers of the company state positively that they have not finally selected the smelter site but it is pointed out that the construction of an aerial tram from the mine to the Brown ranch would be attended by no difficulty whatever. Another argument in favor of the Brown ranch is its proximity to the present terminus of the Cedar Glade-Clarkdale branch of the S. F. P. & P. It will be necessary to extend that branch only about a mile to afford the proposed new smelter adequate transportation facilities. Officials and engineers of the S. F. P. & P. have already looked over the ground and made preliminary plans for the construction of the extension.

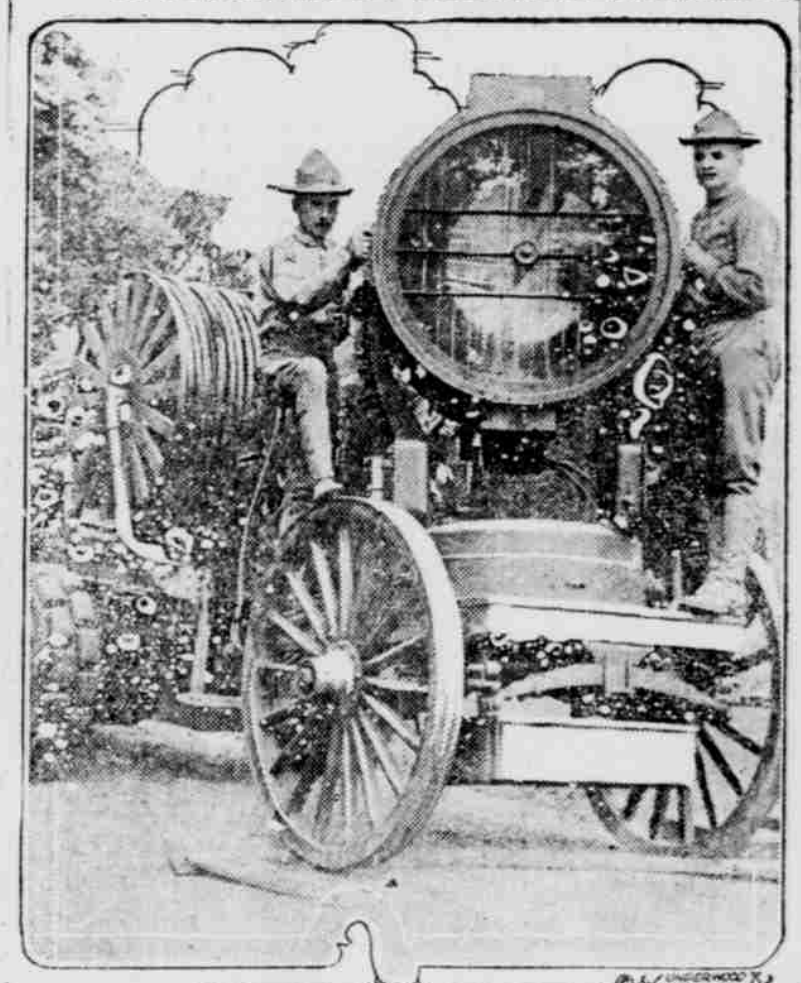
The U. V. Extension company's monthly freight bill is in the neighborhood of \$75,000. This in itself is a powerful argument in favor of the erection of a smelter by the company. Another is that the company can now do nothing with its low grade ores except block them out and leave them for stowing when the smelter is in operation. It is no secret that the U. V. Extension has vast reserves of ore carrying less than 12 percent copper, and is shipping only the ore that averages 16 percent or higher.

James S. Douglas, president of the company, is now out of the state, and it is generally understood that he is on his long planned tour of the smelters of the country for the purpose of studying construction and reduction methods.

The Extension ore is now being shipped to four smelters. It is being divided among the Copper Queen and C. & A. plants at Douglas, the Old Dominion works at Globe, and the Humboldt smelter. Arrangements may be made in the near future to make shipments to the Saco and Hayden plants of the American Smelting & Refining Company.

Difficulty in getting freight cars has hampered the U. V. Extension company for some time. There appears to be a serious shortage of cars and at times when the U. V. E. people could have used seven or eight a day, they could get only four or five. This week, however, the situation shows a slight improvement. Seven

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GIANT SEARCHLIGHT FOR MARINE CORPS
IS DESIGNED BY AMERICAN SERGEANT

The giant searchlight used by U. S. marine corps.

A new field generator and tractor with a searchlight trailer, in use by the U. S. marine corps, was designed by Sergeant Lowmiller of the marines. It is being used with great success for signaling at night, searching for bodies of troops and for such work as bridge building at night.

PROMINENT MEN
COMING TO
MEETING

Big Men in Mining Industry Will Visit Arizona at the Time of the American Institute's Meeting in State.

Prominent mining and metallurgical circles have for almost half a century participated in the work of the American Institute of Mining Engineers, which on the 18th of September will open a week's session in the various mining fields of Arizona. A study of the work of some of the present officers of the Institute, most of whom will attend the Arizona meeting, reveal somewhat the strength of the membership of the Institute.

L. D. Ricketts, consulting engineer, has served as president of the Institute since last February. He succeeds William L. Saunders, chairman of the Board of Ingersoll & Rand Co. and vice-chairman of the Naval Consulting Board. Mr. Saunders has invented apparatus for drilling rock under water, pumping by compressed air, Ingersoll track and bar channels and gadders for quarrying stone. Benjamin B. Thayer, president of the Anaconda Copper Mining Company, is a former president of the Institute. Mr. Thayer is thoroughly familiar with mining operations in many parts of the world, and in addition to his playing great technical skill has infused into his company a loyalty and efficiency that are exceptional. He will accompany the New York special train in his private car.

Sidney J. Jennings, first vice-president of the Institute, is vice-president of the U. S. Smelting, Refining and Mining Company, and has charge of their exploration department. He has had long experience in South Africa in mining and was president of the South African Association of Engineers. George C. Stone, the Institute treasurer, is chief engineer of the New Jersey Zinc Company.

Bradley Stoughton, secretary of the Institute for the past three years, is a consulting metallurgist in New York City and is the inventor of a converter for making steel castings and a process for oil melting in cupolas. He is the author of the widely known textbook "The Metallurgy of Iron and Steel." Among the vice-presidents of the Institute are H. C. Hoover, now known throughout the world as chairman of the Commission for Relief in Belgium, and Karl Eilers, metallurgist and specialist in smelting lead and copper.

Among the directors of the Institute

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MANY MINE FAILURES
NO FAIR CRITERION
TO CONDEMN BUSINESS

Mining and Engineering Journal Discusses Activity of the Exploration Companies Throughout the Country.

The fact that the Canadian Mining and Exploration Company, organized by powerful and prominent interests to acquire and develop mining properties, liquidated after having investigated 1500 propositions without finding one sufficiently attractive to induce it to undertake its exploitation is still being used in various ways as a sad commentary on the chances which a non-expert investor in mining stock has of picking a winner, and moreover to show that the mining industry is on the wane, that good mines are no longer to be found. This notion, however, fails to take into consideration fundamental differences in the policies of the several exploration and development companies, says the Mining and Engineering Journal.

One of our largest and most successful mining organizations maintains an exploration department, and according to its annual report for 1915, had presented to it for consideration 786 properties. Of these 655 were rejected after an office examination of the reports and data submitted. A preliminary field examination of 118 was made, and 13 properties were accorded a complete examination. For the year previous 639 properties were offered. Of these 538 were rejected after an office examination of the reports and data submitted. A preliminary field examination of 82 was made, and in the case of 19 properties a complete sampling and examination was undertaken. Now the policy of this company is to acquire only mines that have a sufficient tonnage of ore developed to show them a profit under their scheme of operation. Many mines today operating at a loss could be worked at a profit by an organization as large as the one we are considering, and it is on this margin of operating returns and on its capabilities of more extensive and more intensive operations that this company relies. So that prospects, no matter how promising, are not considered.

Another of our largest mining concerns operates on an entirely different basis, considering only prospects and declining to undertake the purchase or acquisition of a developed mine. We are not informed as to the number of propositions this company considers in the course of a year, but from its policy it might be judged perfectly good developed mines, which fact would be no reflection on the propositions, because the very same mines might be most desirable

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GREAT RETURN
FROM DAISY
ORES LAST
MONTH

3,500,000 Pounds of Ore from U. V. Extension Smelted Last Month—Figures Close to That of July.

MINE IS SHIPPING 22 PER CENT ROCK

Eight and Ten Per Cent Ore Marked "Second" — Other Property in Verde District Is Looking Up.

(By William P. De Wolf.) PRESCOTT, Ariz., Sept. 2.—Sampler and smelter returns indicate the reclamation of 3,500,000 pounds of copper from United Verde Extension (Little Daisy), ores during the month of August. These figures correspond closely with the copper matte figures for July. There, however, the analogy ends; for the ore tonnage shipped during August was considerably less than during July, which means, of course, that the average copper content of the ore was higher in August than July.

The winze that is being sunk on the 1,400-foot level is down better than 80 feet in ore which carries from 20 to 50 per cent copper to the ton. Native copper is a feature in the winze and in the level above.

With the object of early setting forth the remarkably high copper contents carried by United Verde Extension ores the following comparison with the ores of the United Verde is made. And this comparison carries naught of disparagement; for the United Verde has for years been, and yet is, one of the world's greatest copper mines.

Shipping 22 per cent product. The general average copper content of United Verde ores approximates 6 per cent. The United Verde Extension people label their 10 per cent copper ore "Second Grade." The United Verde management is mining and smelting thousands of tons of from 4 to 8 per cent copper ore monthly. The United Verde Extension management is not shipping a pound of its from 6 to 8 per cent copper ore, although thousands of tons thereof have been opened in the mine. The ore sent out from the United Verde mine carries, on an average, about 6 per cent copper. That sent out from the United Verde Extension mine carries about 22 per cent copper.

The figures quoted tell the story of the treasure in copper disclosed in the United Verde Extension mine more eloquently than would a grouping of superlatives. Also, they demonstrate the presence of a mine of unusual value in a section of the Jerome copper district where certain geologists have hitherto said copper ore would not be found in appreciable tonnage—which tends to the deduction that copper, like gold, is disposed at times to shatter theories, and is more often than no, "where you find it."

Illustration in Point. A case in point with the foregoing is the Monte Christo mine at Constellation. The Monte Christo, although located in a section recognized mainly for its gold-copper deposits, has for a number of years been noted for the value and extent of its silver ore bodies. These ore bodies have been opened to a depth of 900 feet, and chiefly through the financial agency of Ezra Thayer, of Phoenix. At a depth of 960 feet, however, there is a decided change in the geological conditions, accompanied by a subterranean water-flow in large volume. A zone of copper was tapped with the water, and the indications are that below that point the red metal will predominate quite as generally in the mine as does the white metal above.

Barring accident the unwatering of the Arkansas Arizona workings will be completed in a few days. The pumps are working satisfactorily and the end of the tedious job of freeing the 1,600-foot shaft of water is in sight. New drilling and other mine equipment is on hand and will soon be employed in carrying out the company's development plans. So far as

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